

PATENT
Appl. No. 09/824,367
Attorney Docket No. 450100-03146

REMARKS

Favorable reconsideration of the application is respectfully requested in light of the amendments and remarks herein.

Upon entry of this amendment, claims 1-11 will be pending. By this amendment, claims 1 and 3-4 have been amended. No new matter has been added.

§102 Rejection of Claims 1, 3-4, 5-7 and 10-11

On page 2 of the Office Action, claims 1, 3-4, 5-7 and 10-11 stand rejected under 35 U.S.C. §102(e) as being anticipated by Kiriya (U.S. Patent No. 5,561,466).

In the Background of the Invention section of the Specification, it was disclosed that "[w]hen a video stream and an audio stream are multiplexed by an MPEG (Moving Picture Coding Experts Group/Moving Picture Experts Group) transport stream method, which is widely used in broadcasting and AV stream distribution, a multiplexer is required to multiplex the streams in transport packet format ... so that a decoder for separating and decoding a multiplexed stream can separate and decode each of the streams on the basis of a T-STD (transport Stream System Target Decoder) model, which is a virtual decoder model specified by an MPEG system standard." *Specification, page 1, lines 13-23*. Referring to Fig. 1 of the Specification, "[t]he T-STD model is provided with ... a three-stage buffer for a video stream[, a two-stage buffer for an audio stream[, and] a buffer for system control. In the T-STD model, a rate of transfer between the buffers [is] defined precisely." *Specification, page 2, lines 1-9*. "However, since the T-STD model has many defined items as described with reference to Fig. 1, and the buffers are provided in multiple stages, it is not easy to perform simulation for the T-STD model." *Specification, page 15, lines 3-7*.

PATENT
Appl. No. 09/824,367
Attorney Docket No. 450100-03146

To address the problem stated above, embodiments of the present invention provide apparatuses and methods in which "a multiplexing cycle is derived from a rate of transfer of data between buffers in the T-STD model, and then data is multiplexed by using the cycle, so that in simulation for the T-STD model in multiplexing data, the T-STD model can be considered a model that requires consideration of only one buffer, or a model that does not require any consideration of buffers." *Specification, page 15, lines 11-18*. Thus, embodiments of the present invention are "intended to reduce the amount of calculation necessary for multiplexing operation, and readily generate a multiplexed transport stream conforming to the ISO/IEC13818-1 requirements." *Specification, page 15, lines 18-22*.

For example, claim 1, as presented herein, recites:

"A data multiplexer for performing time division multiplexing of a plurality of bit streams, said data multiplexer comprising:

an extracting means for extracting information necessary for multiplexing processing from each of said plurality of bit streams;

a first calculating means for calculating a time division multiplexing cycle for each of said plurality of bit streams such that a separator separates multiplexed data by a specified method on the basis of said information extracted by said extracting means; and

a multiplexing means for performing time division multiplexing of said plurality of bit streams on the basis of a result calculated by said first calculating means,

wherein different multiplexing cycle equations are used by said first calculating means to calculate multiplexing cycles of each of said plurality of bit streams, said different multiplexing cycle equations derived using rates of transfer of data between buffers according to a virtual decoder model conforming to a Moving Picture Experts Group (MPEG) system standard." (emphasis added)

PATENT
Appl. No. 09/824,367
Attorney Docket No. 450100-03146

Accordingly, one aspect of claim 1 comprises at least an extracting means, a first calculating means for calculating a time division multiplexing cycle for each of the plurality of bit streams, and a multiplexing means for performing time division multiplexing of the plurality of bit streams on the basis of a result calculated by the first calculating means, wherein different multiplexing cycle equations are used by the first calculating means to calculate multiplexing cycles of each of the plurality of bit streams, wherein the different multiplexing cycle equations are derived using rates of transfer of data between buffers according to a virtual decoder model conforming to a Moving Picture Experts Group (MPEG) system standard.

By contrast, Kiriya does not teach or suggest the use of multiplexing cycle equations derived using rates of transfer of data between buffers according to a virtual decoder model conforming to a Moving Picture Experts Group (MPEG) system standard. Because Kiriya does not disclose this limitation, Kiriya therefore fails to teach or suggest all the limitations of claim 1.

Based on the foregoing discussion, claim 1 should be allowable over Kiriya. Further, since independent claims 3-4 parallel claim 1 and recite similar limitations as recited therein, claims 3-4 should also be allowable over Kiriya. Furthermore, since claims 5-7 and 10-11 depend from one of claims 1 and 3, claims 5-7 and 10-11 should also be allowable over Kiriya.

Accordingly, it is submitted that the rejection of claims 1, 3-4, 5-7 and 10-11 based upon 35 U.S.C. §102(e) has been overcome by the present remarks and withdrawal thereof is respectfully requested.

PATENT
Appl. No. 09/824,367
Attorney Docket No. 450100-03146

§103 Rejection of Claim 2

On page 4 of the Office Action, claim 2 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Kiriyaama in view of Fukuda *et al.* (U.S. Patent 5,937,138; hereinafter referred to as "Fukuda").

Based on the foregoing discussion regarding independent claim 1, and since claim 2 depends from claim 1, claim 2 should also be allowable over Kiriyaama. Regarding Fukuda, the Office Action states, "Fukuda discloses calculating the occupancy rate (refer to Col 65-71)." *Office Action, page 5, line 1.* Even assuming that Fukuda discloses calculating the occupancy rate, Fukuda fails to teach or suggest the use of multiplexing cycle equations derived using rates of transfer of data between buffers according to a virtual decoder model conforming to a Moving Picture Experts Group (MPEG) system standard. Therefore, since claim 2 should be allowable over Kiriyaama as discussed above, Kiriyaama and Fukuda, individually or in combination, fail to teach or suggest all the limitations of claim 2.

Accordingly, it is submitted that the rejection of claim 2 based upon 35 U.S.C. §103(a) have been overcome by the present remarks and withdrawal thereof is respectfully requested.

§103 Rejection of Claims 8-9

On page 5 of the Office Action, claims 8-9 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Kiriyaama in view of Fukuda, in further view of AAPA (Applicant Admit Prior Art).

Based on the foregoing discussion regarding independent claim 1, and since claims 8-9 depend from claim 1, claims 8-9 should also be allowable over Kiriyaama. Further, as to claim 8, it is indicated in the Office Action that neither Kiriyaama nor Fukuda expressly indicate

PATENT
Appl. No. 09/824,367
Attorney Docket No. 450100-03146

transferring data using a leak method. *See Office Action, page 5, lines 14–15.* As to claim 9, it is indicated in the Office Action that neither Kiriyaama nor Fukuda expressly indicate transferring data using a vbv_method. *See Office Action, page 6, lines 7–8.* Claims 8–9 should therefore be allowable over Kiriyaama and Fukuda. Regarding AAPA, the Office Action states as to claim 8, “AAPA indicate ... transferring data utilized leaking method, wherein said specified method is a leak method that is used to transfer said plurality of bit streams between buffers [refer to page 7].” *Office Action, page 5, lines 17–19.* The Office Action also states as to claim 9, “AAPA ... indicates transferring data utilized vbv_method, wherein said specified method is a leak method that is used to transfer said plurality of bit streams between buffers (refer to page 8).” *Office Action, page 6, lines 10–12.* Thus, even assuming that AAPA discloses as cited the use of a leak method or a vbv_method of data transfer, AAPA fails to teach or suggest the use of multiplexing cycle equations derived using rates of transfer of data between buffers according to a virtual decoder model conforming to a Moving Picture Experts Group (MPEG) system standard. Therefore, since claims 8–9 should be allowable over Kiriyaama and Fukuda as discussed above, Kiriyaama, Fukuda, and AAPA, individually or in combination, fail to teach or suggest all the limitations of claims 8–9.

Accordingly, it is submitted that the rejection of claims 8–9 based upon 35 U.S.C. §103(a) have been overcome by the present remarks and withdrawal thereof is respectfully requested.

Conclusion

In view of the foregoing, entry of this amendment, and the allowance of this application with claims 1–11 are respectfully solicited.

PATENT
Appl. No. 09/824,367
Attorney Docket No. 450100-03146

In regard to the claims amended herein and throughout the prosecution of this application, it is submitted that these claims, as originally presented, are patentably distinct over the prior art of record, and that these claims were in full compliance with the requirements of 35 U.S.C. §112. Changes that have been made to these claims were not made for the purpose of patentability within the meaning of 35 U.S.C. §§101, 102, 103 or 112. Rather, these changes were made simply for clarification and to round out the scope of protection to which Applicant is entitled.

In the event that additional cooperation in this case may be helpful to complete its prosecution, the Examiner is cordially invited to contact Applicant's representative at the telephone number written below.

The Commissioner is hereby authorized to charge any insufficient fees or credit any overpayment associated with the above-identified application to Deposit Account 50-0320.

Respectfully submitted,

FROMMER LAWRENCE & HAUG LLP



By: Charles E. Eggers, Reg. No. 56,343 for
William S. Frommer
Reg. No. 25,506
(212) 588-0800